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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
09 853,833	05 10 2001	Salvatore Leonardi	856063.694	6456

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EXAMINER

ANDUJAR, LEONARDO

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 01 02 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,833

Applicant(s)

LEONARDI, SALVATORE

Examiner

Leonardo Andújar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-8, 17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 17 and 19 is/are allowed.
- 6) ☐ Claim(s) 1-8 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 30 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Acknowledgment

1. The amendment filed on 09/30/2002, paper no. 11, in response to the Office action mailed on 05/31/2001 has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-8, 17, 19 and 20.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Italy on 05/11/2000. The certified copy of the priority document has been received.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutter et al. (US 4,980,747).

5. Regarding claim 1, Hutter (e.g. fig. 11) shows a substrate 10 wherein a buried layer 12 and an epitaxial region have been formed, and an isolation structure adapted to define a plurality of isolation wells (34, 36) for integrating the components of the

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integrated device (col. 5/lis. 42-52). The isolation structure comprises a plurality of dielectrically insulated trenches (26, 38, 40). Also, each trench has an open bottom and a conductive material 53, which is in direct contact with the substrate.

6. Regarding claim 2, Hutter shows that the dielectric trenches are formed at the edges of the isolation wells in contact with the buried layers.

7. Regarding claim 3, Hutter shows that the trenches are formed in intervening areas between adjacent isolation wells in contact with the substrate.

8. Regarding claim 4 Hutter shows that the plurality of trenches are in contact with the buried layer located and are located at each edge of the isolation wells.

9. Regarding claim 5, Hutter shows that the intervening area between isolation wells includes a plurality of trenches in contact with the substrate (col. 5/lis. 42-52).

10. Regarding claim 6, Hutter shows that the plurality of trenches comprise dielectric region (38, 40) surrounding the contact regions.

11. Regarding claim 7, Hutter shows that active components integrated in the intervening regions between the plurality of trenches (col. 5/lis. 42-52).

12. Regarding claim 8, Hutter shows that the isolation structure contacts the buried regions of high or low voltage active components of the integrated device (col. 5/lis. 42-52).

13. Regarding claim 20, Hutter (e.g. fig. 11) shows isolation trench structure formed in a semiconductor substrate 10 having a buried region 12, comprising: an isolation structure formed in the substrate to define a plurality of isolation wells (34, 36). The isolation structure comprises a plurality of trenches 26, each trench having sidewalls

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lined with an insulating dielectric material (38, 40) to define a central cavity. Also, Hutter shows a conductive material 53 filling the central cavity and in contact with the substrate.

14. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Meyer (US 5,665,633).

15. Regarding claim 20, Meyer (e.g. fig. 14) shows isolation trench structure formed in a semiconductor substrate having a buried region, comprising: an isolation structure 132 formed in the substrate to define a plurality of isolation wells. The isolation structure comprises a plurality of trenches 136, each trench having sidewalls lined with an insulating dielectric material to define a central cavity (col. 6/lis. 22-23). Also, Meyer shows a conductive material 138 filling the central cavity and in contact with one of either the substrate or the buried region to provide a conductive path to the substrate surface (i.e. via the interconnect 114).

Allowable Subject Matter

16. Claims 17 and 19 are allowed.

Response to Arguments

17. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

18. In response to applicant's arguments (i.e. claim 20) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a trench having an open bottom and filled with conductive material) are not recited in the rejected claim(s). Although the claims are interpreted in light of

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the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

20. Papers related to this application may be submitted directly to Art Unit 2826 by facsimile transmission. Papers should be faxed to Art Unit 2826 via the Art Unit 2826 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2826 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2826 Fax Center is to be used only for papers related to Art Unit 2826 applications.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leonardo Andújar** at **(703) 308-0080** and between the

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hours of 9 00 AM to 7:30 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Leonardo Andujar@uspto.gov If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on (703) 308-6601

22 Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 305-3900**.

23 The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U S Class / Subclass (es) 257/501,505,506 and 520	12/01
Other Documentation:	
Electronic Database(s) East (USPAT, US PG PUB, JPO, EPO, Derwent, IBM TDB)	12/01

Leonardo Andújar

Patent Examiner Art Unit 2826

LA
12/16/02